

Organisations & Data Management

Developing a RDBMS, p 45

1. In which stage of the PSM does this occur?
This occurs in the development stage.
2. What is meant by referential integrity?
The presence of data in foreign keys.

Testing the solution, p 49

1. What is the purpose of testing?
Testing the product is done to ensure that all features and functions work correctly and that the information produced is free of errors.
2. Distinguish between informal and formal testing.
Informal testing occurs during the development stage, as software developers create a solution they are constantly informally testing to see if the solution behaves accordingly to expectations. While **Formal testing** involves testing the overall solution after it has been completed to see if the solution solves the problem.
3. What is a bench test?
A test/check that determines how the solution, or a component of a solution, would behave with a range of test data.
4. What is a test plan and what are the benefits of having a test plan?
A test plan is used to show all the functions to be tested. It gives you a better indication of what should be happening and what you must fix/improve upon.
5. What is meant by user acceptance testing?
Users are to follow a series of steps to complete a task in the solution or interpreting the information contained in the output, then providing feedback to the developers.

Testing procedure:

The test plan is used to allow a systematic check of each part of the solution to ensure its proper operation. It involves six steps (three at design stage & three at development stage):

1. Decide on tests to be conducted (design stage).
2. Determine the test data (design stage).
3. Determine expected results (design stage).
4. Record results of testing (develop stage).
5. Correct any errors (develop stage).
6. Provide concluding statement (develop stage).

Features to test:

1. Testing table validation
 - a. What is the purpose of testing validation?
It ensures that the data is accurate before it is entered via forms or queries that run. It's important to choose test data that will test the boundaries of the validation rule as well as the data type and even the existence of the data.
 - b. What is the rule of thumb in testing data values?
Is to test a value before the value itself and one value greater than the value in the validation rule.
2. Testing the query selection criteria
 - a. In testing the queries, why must the test data be chosen carefully?
The test data must be chosen carefully to ensure that there are some records that should be returned by the query.
3. Testing formulas and summary statistics
It's critical to test formulas and summary statistics, that occur in developer's queries. Choose appropriate test data so that it is easy to determine if the final result is accurate.
4. Testing sorting, primary & secondary
Key feature of the query is making sure we can sort the results in an organised and useable manner. Primary and secondary sorts have to be tested, the key is to demonstrate that a sort works numerically, alphabetically and alphanumerically.